

In the claims:

Claims 1-66 (cancelled)

~~1-67.~~ amended) A method for diagnosis comprising:

- a) obtaining a sample from a subject;
- b) measuring a concentration of at least two kynurenine metabolites in said sample;
- c) comparing said concentrations of said at least two kynurenine metabolites to corresponding reference concentrations of said at least two kynurenine metabolites; and
- d) diagnosing a medical condition based on results of said comparing

wherein said medical condition is related to epilepsy.

~~2-68.~~ (amended) The method of claim ~~1-67~~, wherein said at least two metabolites are selected from a group consisting of neuroprotective metabolites and neurotoxic metabolites.

~~3-69.~~ (amended) The method of claim ~~2-68~~, wherein said group consists of TRP (tryptophan), KYN (kynurenine), 3HOKYN (3-hydroxykynurenine), AA (anthranilic acid), 3HOAA (3-hydroxyanthranilic acid), KA (kynurenic acid) and QUIN (quinolinic acid).

~~4-70.~~ (amended) The method of claim ~~2-68~~ wherein a first metabolite selected is a neuroprotective metabolite and a second metabolite selected is a neurotoxic metabolite.

~~5-71.~~ (amended) The method of claim ~~4-70~~ wherein said first metabolite is KA (kynurenic acid) and said second metabolite is 3HOAA (3-hydroxyanthranilic acid).

~~6-72.~~ (amended) The method of claim ~~4-70~~ wherein said first metabolite is AA (anthranilic acid) and said second metabolite is 3HOAA (3-hydroxyanthranilic acid).

~~7-73.~~ (amended) The method of claim ~~4-70~~ wherein said first metabolite is KA (kynurenic acid) and said second metabolite is QUIN (quinolinic acid).

~~9-75.~~ (amended) The method of claim ~~8~~ 74 67 wherein said medical condition is epilepsy.

~~10~~ 76. (amended) The method of claim ~~8~~ 74 67 wherein said medical condition is a predisposition to epilepsy.

~~11~~ 77. (amended) The method of claim ~~10~~ 76 wherein said subject is substantially free of clinical manifestations indicative of epilepsy.

~~12~~ 78. (amended) The method of claim ~~1~~ 67 wherein said corresponding reference concentrations are metabolite concentrations of an individual without said medical condition.

~~13~~ 79. (amended) The method of claim ~~1~~ 67 wherein said corresponding reference concentrations are metabolite concentrations of an individual with said medical condition.

~~14~~ 80. (amended) The method of claim ~~1~~ 67 wherein said corresponding reference concentrations are metabolite concentrations of an epileptic.

~~15~~ 81. (amended) The method of claim ~~1~~ 67 wherein said comparing comprises

- i) determining a first ratio, being a ratio of two of said determined metabolite concentrations;
- ii) determining a second ratio, being a ratio of two of said corresponding reference concentrations; and
- iii) comparing said first ratio to said second ratio.

~~16~~ 82. (amended) The method of claim ~~1~~ 67 wherein said comparing comprises

- i) defining a function, said function being dependent on metabolite concentrations;
- ii) determining a first value, said first value determined by a value of said function at said determined metabolite concentrations;
- iii) determining a second value, said second value determined by a value of said function at said corresponding reference concentrations; and

iv) comparing said first value to said second value.

~~17~~ **83.** (amended) The method of claim ~~16~~ **82** wherein said function is selected from the group comprising:

$$([KA][3HOKYN])/([KYN][3HOAA])$$

$$([KA] + [AA]) / [3HOAA] ;$$

$$[3HOAA] / [3HOKYN];$$

$$[KA] / ([3HOAA][TRP]);$$
 and

$$([KA] + [AA]) / ([3HOAA][TRP]).$$

~~19~~ **84.** (amended) The method of claim ~~1~~ **67**, further comprising:

e) determining an amount of an anti-epileptic drug in the subject; and

wherein said diagnosing of said medical condition is further based on said determined amount of said anti-epileptic drug.

~~20~~ **85.** (amended) The method of claim ~~19~~ **84** wherein said determining said amount of said ~~AED~~ **anti-epileptic drug** comprises measuring a concentration of said ~~AED~~ **anti-epileptic drug** in said sample.

~~21~~ **86.** (amended) The method of claim ~~19~~ **84** wherein said determining said amount of said ~~AED~~ **anti-epileptic drug** comprises noting a dosage of said ~~AED~~ **anti-epileptic drug** given to said subject.

~~22~~ **87.** (amended) The method of claim ~~19~~ **84** wherein said medical condition is an individual reaction to an anti-epileptic drug.

~~23~~ **88.** (amended) The method of claim ~~22~~ **87**, further comprising:

(f) adjusting a treatment regimen of said subject based on said diagnosing of said medical condition.

~~24~~ **89.** (amended) A system for diagnosis comprising:

a) a sample taken from a subject; and

b) a device configured to:

- i) measure a concentration of at least two kynurenine metabolites in said sample; and
- ii) compare said concentrations of said at least two kynurenine metabolites to corresponding reference concentrations of said at least two kynurenine metabolites.

25 90. (amended) The system of claim 24 89 wherein at least one of said at least two kynurenine metabolites is a neurotoxic metabolite and at least one of said at least two kynurenine metabolites is a neuroprotective metabolite.

26 91. (amended) The system of claim 24 89 wherein said device is configured to compare said concentrations by:

- ~~a-ii.1.~~ determining a first ratio, being a ratio of said measured metabolite concentrations;
- ~~b-ii.2.~~ determining a second ratio, being a ratio of said corresponding reference concentrations; and
- ~~c-ii.3.~~ comparing said first ratio to said second ratio.

27 92. (amended) The system of claim 24 89 wherein said device is further configured to:

- iii) display a possible diagnosis of a medical condition based on results of said comparing.

28 93. (amended) The ~~method~~ system of claim 27 92 wherein said medical condition is related to epilepsy.